

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A horizontal boring machine for boring cylindrical surfaces having horizontal axes and axially spaced apart from each other, such as the seats for an engine crankshaft in the crankcase of an internal combustion engine, including:

- a boring bar driven in rotation by a chuck and carrying ~~at least one cutting bit~~ a pair of diametrically opposed cutting fits, driving means for driving rotation of said chuck, means for axially moving the group composed of the chuck and the associated driving means, a counter-bar coupled in rotation head-to-head with said boring bar and driven in rotation by a respective auxiliary chuck, driving means for driving the rotation of the auxiliary chuck in synchronism with the rotation of the boring bar, means for axially moving the group composed of said counter-bar and the associated driving means, in synchronism with the axial movement of the boring bar, said boring bar being provided with a device for adjusting the radial position of said ~~at least one cutting bit~~ bits that ~~is~~ are associated therewith,

wherein said counter-bar is also equipped with ~~at least one cutting bit~~ a pair of diametrically opposed cutting bits, whereby the counter-bar constitutes an auxiliary boring bar, and is provided with means for radial adjustment of the counter-bar cutting ~~bit~~ bits,

wherein ~~both the main boring bar, and the counter bar are each provided with a pair~~ the pairs of diametrically opposed cutting bits, ~~which are to~~ work on the same cylindrical surface each time,

wherein each cutting bit is carried near the free end of a blade, the opposite end of which is fixed to the body of the associated bar at axially spaced positions and are oriented toward each other with their bit-carrying ends, and which is elastically deformable outwards due to the effect

of a radial pin carried by the free end of the blade engaging against a conical portion of a shaft sliding inside an axial cavity of said bar, and

wherein the axially slideable conical portion causes adjustment of the radial positions of the two diametrically opposed cutting bits on each of said bar and said counter-bar.

2.-3. (canceled).

4. (previously presented): A boring machine according to claim 1, wherein the cutting bits of each pair are axially staggered with respect to each other.

5. (currently amended): A method for boring cylindrical surfaces having horizontal axes and axially spaced apart from each other, such as the seats for an engine crankshaft in the crankcase of an internal combustion engine, in which:

- coupling a boring bar carrying ~~at least one cutting bit~~ diametrically opposed cutting bits and a counter-bar in rotation head-to-head with said boring bar for insertion through a series of surfaces to be machined, from opposite ends of said series of surfaces,

- simultaneously driving said boring bar and said counter-bar in synchronized rotation to perform the boring each of said surfaces via the ~~cutting bit, or the~~ cutting bits,

- during the rotation of the bars, the groups carrying said boring bar and said counter-bar are moved axially in a simultaneous and synchronized manner to perform the machining of each cylindrical surface,

- said boring bar being equipped with a device for adjusting the radial position of the one, or each, cutting bit that is associated with it,

wherein the aforesaid counter-bar is also equipped with ~~at least one cutting bit~~ diametrically opposed cutting bits, whereby it constitutes an auxiliary boring bar that performs the boring of a surface different from the surface being worked by the cutting ~~bit~~ bits of the main boring bar and wherein each cutting bit is carried near the free end of a blade, the opposite end of which is fixed to the body of the associated bar at axially spaced positions and are oriented

Amendment Under 37 C.F.R. § 1.116
Serial No.: 10/667,363
SUGHRUE MION, PLLC Ref: Q77674

toward each other with their bit-carrying ends, and which is elastically deformable outwards due to the effect of a radial pin carried by the free end of the blade engaging against a conical portion of a shaft sliding inside an axial cavity of said bar.

6. (currently amended): A method according to claim 5, wherein said counter-bar is also equipped with means for radial adjustment of the cutting ~~bit~~-bits carried by the counter-bar.